Psychosomatic medicine: an interpretation

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The word *psychosomatic* is a hybrid. It refers to a borderline zone of medicine which is indisputably relevant, complex, sometimes baffling, yet always fascinating. Here the definition will be broad: to encompass all those relationships pertinent to medical science occurring between phenomena describable within a psychological frame of reference and those describable in strictly biological terms, regardless of whether the two may be causally related or only mutual concomitants. Put simply, this usage includes the range of somatic symptoms that accompany life stress in all its forms, the variety of psychological disturbances that may appear during any serious illness, the array of psychophysiological and psychoendocrine mechanisms about which knowledge is accumulating and the possible contribution of these mechanisms to certain chronic illnesses of unknown etiology, especially those involving the autonomic or endocrine systems and their end organs.

What of the second word, *interpretation*? It has several meanings. Commonest is *translation*, from one language to another. It can also mean "explanation of that which is obscure." Or it may refer to "representation, or rendering, as of a work of art." Our discussion will bear on all of these connotations, including the last. Although a young medical specialty, psychosomatic medicine has already accumulated an impressive body of data. A single essay can only sample one individual's selective views.

*Some of its early findings from the first 20 volumes of the journal, *Psychosomatic Medicine*, have recently been published in a paperback, *Psychosomatic Classics*. 
The obscurities become philosophical. Not many philosophers, it is true, are still absorbed by the mind-versus-body controversy per se, regarding it principally as a pseudo-problem, an exercise in semantics. Certainly most workers in the field of psychosomatic medicine have come, like Cobb to a pragmatic brand of monism, feeling that mental and physical belong ultimately to only one universe. When we plan to study their interaction, however, problems arise. Biology belongs to the science of things, physiology to the science of men. To bring the two together is not easy.

A DUAL CONCEPTUAL FRAMEWORK

Let me give a clinical example. A man suffers the following apparently minor loss: the physician who has been seeing him once a week for six weeks in a clinic rotates to another service. The patient forgets that he was told of this and is totally surprised not to find the same doctor when he comes in the following week. He reports feeling dazed and confused but denies that the loss matters, saying, “After all, I wasn’t married to him.” Within 24 hours he develops a major exacerbation of diffuse, chronic, bloody diarrhea. How do we characterize reliably the global events going on in his mind? How do we relate them to the diffuse, vascular, enzymatic and generalized metabolic disorder, ulcerative colitis? The task requires specification of the dual conceptual framework and a parallel explicitness about operations, which workers in one well-established area alone can often ignore. Moreover, there is a need to inquire constantly into the obscurities of mechanism, to go beyond mere temporal correlation, which may lead to only apparent explanations. The search for mechanisms centers in the brain. It leads inward to the body and outward to symbolic systems and the social milieu. The exponential increase of knowledge has made it essential, as Weiner points out, that most work in this field be collaborative and interdisciplinary, thus adding further problems of communication between research workers.

Interpretation, in the sense of communication, is important not only for the psychosomatic investigator, but also for the clinician and teacher, who must serve as translator between groups with radically different languages, arising from different training assumptions and habits of thought.

History confirms the difficulties of breaching these barriers. Interest in psychosomatic phenomena has shown an ebb and flow within the mainstream of medicine. Rooted in anecdote since antiquity, stressed by medical authorities in the last century, the role of emotional factors was eclipsed by the germ theory and the rise of laboratory methods. In the decade before World War II, it again surged to the fore: dynamic psychiatry, stemming from Freud, and dynamic physiology, stemming from Claude Bernard, Sherrington and especially Walter Cannon, saw hidden motives and hidden emotional mechanisms, the understanding of which opened vistas in many disease areas. Dunbar collected the voluminous, scattered clinical observations made through history about emotions and bodily diseases. These trends crystallized in a sense of excitement and breakthrough. The problems posed by emotional stress, attacked by collaborative efforts during the war itself, helped to bring interest and prestige to a peak. The journal Psychosomatic Medicine, and as contributors a group of outstanding psychiatrists, physiologists, internists and neurologists, along with other medical specialists, established the movement on a broad footing.
Tides change. Accelerating laboratory science continued to dominate academic medicine. In mental health new frontiers; drug treatment of the psychoses; group, social and community psychiatry came to the fore. The psychosomatic approach was no longer novel and even had an aura about it of false promise, as though it had held out expectations of discovering the "bacillus psychosomaticus" for a number of chronic disorders and along with that the hope of their cure. Disillusion ensued in both internal medicine and psychiatry. Psychodynamic explanations appeared repetitive and sterile while patients continued to wheeze, or itch, or bleed.

What continued to occur however, was a less spectacular consolidation in the field. Serious investigators, extending the insights of early pioneers like Groddeck, Felix Deutsch, Franz Alexander and Harold Wolff, were building a steadily deeper scientific foundation for psychosomatic medicine. Allied with them, an increasing number of strong liaison services exerted a growing influence upon medical practice. Today, as social currents are again affecting medicine, some signs suggest a resurgence of interest in psychosomatic medicine. It is appropriate to interpret in more detail where it is moving as science and what it can contribute as clinical art.

Necessarily selective, this review will focus on three topics: (1) the general growth of interdisciplinary models and methods, drawing illustrations primarily from the gastrointestinal system; (2) the specific problem of "learning" as it applies to autonomic and endocrine functions, drawing illustrations primarily from the respiratory system; (3) some practical considerations for physicians, including psychiatrists, about diagnosis, treatment and new trends in medical care delivery and education.

(1) INTERDISCIPLINARY MODELS AND METHODS—THE GASTROINTESTINAL SYSTEM.

Folklore, supplemented by early unsystematic clinical observations, has long held that psychological factors contribute importantly to normal and pathological gastrointestinal function. In recent years the disease state peptic ulcer became the object of growing scrutiny. Alexander included ulcer among a number of diseases for which he formulated a series of broad hypotheses. These used the model of mobilization and incomplete discharge of emotion, tying this to prevailing knowledge of physiology, particularly Cannon's division of autonomic responses into "fight-flight" and "housekeeping" functions. Ulcer in this view was related to intense hungry yearnings. These were originally for food, then became directed at the feeding person and in later life at derivative and symbolic sources of dependent gratification. The clinical hypothesis was that such chronically mobilized yearnings were unsatisfied because of external or (more commonly) internal frustrating constraints. The result of this dammed-up, relatively specific emotion, in the physiological sphere, was chronic gastroduodenal hyperactivity and eventual ulcer formation.

The model had an inherent plausibility and seemed to be supported by clinical observations from Alexander's and other groups. Alternative views, still directed at the emotional processes concerned, were also proposed. Mahl suggested a more general view that mere anxiety was the noxious psychologic force, presumably interacting with a degree of biologic vulnerability. At the opposite pole was the view that some type of very early symbolic expression...
mysteriously led toward the actual formulation of a bodily lesion. Although this view in its extreme form got little credence, the notion that primitive symbolization might play some role in the ulcer process was actually mixed into Alexander's view of a vector function for different parts of the g. 1. tract, the upper being concerned with receptive, the lower with retentive and expressive functions. A number of early psychoanalysts actually proposed that less fixed, insidious and invisible lesions than ulcer—for instance, attacks of colitis—might in part represent symbolic expression of conflict in bodily form, a kind of physiological conversion, related to hysteria but involving massive emotions and primitive conflicts. The problem of cart and horse, that is, the possibility that symbolic meanings might be secondarily attached to lesions originally resulting for other reasons, remained to plague such theories and, indeed, the whole field.

STUDIES OF GASTRIC FISTULA

A different line of investigations involved the long series of individuals with gastric fistula. These experiments of nature brought direct evidence that emotions could exert a powerful influence on motility, secretion and vascularility of the gut, although difficulties in precise assessment of the emotions themselves, as well as differences between subjects and modes of experimentation, left many links obscure. Margolin's studies led him to the view that regressive patterns of behavior, associated with immature fantasies, might revive the psychological violence and physiological lability originally characteristic of infancy; these might be deleterious to adult physiologic systems no longer able to tolerate extreme fluctuations. Engel, starting from observations on an infant, Monica, with gastric fistula complicated by depressive apathy and failure to thrive, suggested a more specific notion. This was that an important set of emotional responses, opposite to those concerned with fight-flight, had to do with "conservation withdrawal." In its extreme form (as after severe losses) it might, he argued, lead to an attitude of "giving up" as well as feelings of having been given up; and in fact he felt he could discern these as antecedent to a surprising variety of medical disorders.

Clearly an overlapping, some would say overlapping, type of model must be borne in mind—namely the biogenetic, stressed by many observers aware of the lifelong physiologic propensity which seems to characterize many psychosomatic patients. Binger argued early that both emotional instability and vascular lability in hypertensive patients might emerge from a common genetic matrix. Minsky advanced evidence that excessive production of pepsin, reflected in elevations of serum pepsinogen and of uropepsin excretion, characterized individuals prone to develop peptic ulcer and was detectable in the first years of life, a view which opened important vistas, although, predictably, it proved oversimple. Minsky also suggested that the abnormally active gastrointestinal system in the potential ulcer patient might lead to a somatopsychic pattern of excessive dependent involvement with his early caretakers.

Biological models led psychosomatic investigators into other areas of medical and psychiatric research. The concept of the role of the limbic system in elaborating emotional responses was advanced by MacLean in his pioneering essay, The Visceral Brain, and abundant work of his own and others which pursued that insight. Mason's concept of fundamental integration of endocrine systems and the brain into catabolic and anabolic systems suggested that

Engel felt attitude of "giving up" might precede disorders
excessive gastroduodenal hyperresponsivity might occur in reactive waves in the aftermath of acute catabolic reactions to stress. Needless to say, neuroendocrinology and neuropharmacology began to focus on the role of central neural transmission in the major mood disorders and in schizophrenia so that gradually the lines became blurred between psychosomatic and general psychiatric inquiry.

Still other views stressed social forces in relationship to psychosomatic medicine. Halliday in Great Britain described an upward trend in somatization reactions, including gastrointestinal disorders, following World War II. Sociologic factors, whether less complex, such as poverty, or more complex, such as "social alienation," are hard to assess, and work on them has only begun, yet they assume more importance as we accumulate evidence of how totally involved man is in the social systems around him.

Postponing discussion until later of another important set of models, those concerned with learning, we may note here that the hypotheses mentioned so far are not mutually exclusive. They may be related to one another in more comprehensive ways. Weiner, Thaler, Reiser and Mirsky, for example, studied 2073 army recruits under the social stress of basic training; they used a biologic indicator, serum pepsinogen level, selecting an experimental group (63 men with high pepsinogen levels) and a control group (57 men with low pepsinogen levels); within these groups they assessed psychologic vulnerability by means of projective tests. Thus they used a combined model, stating that social, biologic and psychological factors were separately necessary and together sufficient conditions for ulcer formation.

Their findings were striking. In the combined group of 120 healthy recruits, exposed to this common stress, four men initially and five later showed x-ray evidence of duodenal ulcer. All of these were in the high pepsinogen (biologically vulnerable) group and had been so classified by blind rating of their psychological tests. In a more exacting challenge, the authors selected 10 cases from their combined pool of 120 projective records which they judged, still on a blind basis, to be most likely to show evidence of ulcer. Their predictions were correct in seven of the 10. Of the three who showed no evidence of ulcer, two were in the high pepsinogen group. Although full-scale replication of this necessarily elaborate experiment has neither been accomplished nor attempted, Cohen et al. did accomplish a partial replication with a small group of civilian subjects, using some of the psychological tests from the original study.

Methods thus guided and sharpened the profusion of theories. Evidence of somatic malfunction served as an anchor point for even the more clinical psychodynamic studies of ulcer. In studies of fistula patients, Engel combined naturalistic observations with a number of experiments.

THE WORK OF ALEXANDER AND COLLEAGUES

A lengthy experiment was also carried out by Alexander and his colleagues, whose formulations had been criticized for being bold but loose. Setting out to test his belief that different syndromes were characterized by specific emotional conflicts, a group of judges studied material from 70 patients equally divided among seven psychosomatic disorders—peptic ulcer, essential hypertension, bronchial asthma, neurodermatitis, thyrotoxicosis, ulcerative colitis and rheumatoid arthritis. Patients were young adults, half male and half female, and

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Social, psychological and biological factors may combine in ulcer

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had a history of disease onset in adulthood. Tape recorded interviews were edited by a medical censor to remove clinical cues which would reveal the disorder a given patient had. What was left was a description of social events, personality conflicts and the contexts in which symptoms had their onset.

These edited records were then given to a group of psychoanalysts charged with trying to select on a blind basis which disease a given patient had. Although their performance was not perfect, the proportion of "hits" was significantly better than chance; they identified 51 per cent of the cases correctly. As a control the same edited records were given to a group of internists for the same judging task, the presumption being that they would react to medical information left in the records. Probably some had been for the internists also detected cases at better than chance levels, scoring 25 per cent "hits." Their success rate was strikingly lower than the psychoanalysts'; further studies suggested that the two groups were making their judgments on different information and even succeeding on different cases. The results imply that Alexander's formulations have definite though limited validity, that there is something in the overall makeup of many individuals who have these different diseases which reflects itself in their psychological life and appears to antedate the outbreak of symptoms. The generality of such factors and their exact relevance to etiology awaits further elucidation.

Work on psychosomatic aspects of peptic ulcer alone is voluminous. A recent review cites 244 references. But it is necessary to be cautious and precise for ulcer is not an entirely homogeneous disorder. There are differences according to location, duodenal or gastric; the disease in women may differ from that in men. The proportion of women affected seems unaccountably to have shrunk during this century. Other methods by which psychological features have been studied include clinical experiments, always difficult in the capricious and testwise human animal; the use of psychological tests aimed at verifying specific hypotheses, particularly those having to do with oral conflicts; epidemiological surveys showing the relationship of acute complications of ulcer—hemorrhage and perforation—to severely stressful events such as military bombing.

A final word will concern experimental production of ulcer in animals. Various methods, such as restraint and noxious electrical shock, can induce acute ulcers experimentally, varying with species and strain of animal and with different stimulus conditions. Usually these are acute gastric erosions like those seen with burns or brain injury so that the relationship to human duodenal ulcer remains conjectural. The most dramatic instance of ulcer production was that used by Brady and his colleagues in their celebrated executive monkey experiment. This involved four pairs of monkeys, yoked together, in a stress avoidance situation. The monkeys were shocked electrically; shock could be avoided by bar pressing on the part of only one of the pair. The experimental regime was long and rigorous, six hours on and six hours off, so that both stimulation and bar pressing lasted over days. In all four cases one monkey developed fatal ulceration, which bore a remarkable resemblance to human duodenal ulcer. In all cases this was the bar-pressing monkey; hence the analogy to the human executive, subject to constant emotional strain.

Unfortunately, attempts to replicate this crucial experiment have not been successful. One of the most interesting recent efforts to do so is that of Weiss. He attempted to replicate the executive paradigm, using rats, only to find the opposite effect. Rats, in pairs, received shocks; one of them could
avoid or escape the shock by appropriate bar pressing. After prolonged exposure to this situation, one of the pair developed gastric ulceration, but in a statistically significant proportion of cases this was the yoked member of the pair, who had been passively shocked without access to avoidance or escape maneuvers. In a brilliant analysis of his data and a parallel analysis of Brady’s, Weiss was able to reconcile the two sets of results. He pointed out that in his experiments

... where the animal able to perform the coping response developed less severe symptomatology than its helpless partner, the shock was always preceded by a tone signal, a standard avoidance procedure. Thus the tone always predicted the occurrence of shock and could serve as a signal for the animal to respond at the appropriate time. In the executive monkey experiment, on the other hand, shock was not preceded by a signal, for a Sidman avoidance schedule was used. In this avoidance situation the animal postponed (avoided) shock with each response, but it had no external signal to inform it that shock was imminent.

Put simply, the Sidman procedure calls for constant vigilance and virtually continuous bar-pressing activity. The alternative, more common avoidance procedure, provides relevant feedback, indicating success and, to put it anthropomorphically, permitting relaxation until the next signal. Weiss was able to manipulate the amount and nature of feedback in several ways and showed that such maneuvers had further decisive influence on the severity of gastric involvement.

He also postulated that bar pressing by itself might be an indicator of proneness to ulceration (again to anthropomorphize, a general sign of agitation or strain). Both members of his pairs had the opportunity to bar press though it was only effective for one. When he looked at the quantity of pressing alone, regardless of its effectiveness or of which animal was doing it, he found, in fact, a positive correlation with the development of lesions. Weiss also pointed out that actually the executive monkeys in Brady’s experiment had been selected because on pretest they were the members who responded at a higher rate.

This meticulous work requires extension and repetition. Its relevance to human peptic ulcer is still unclear. One hopes that ultimately it will lead to replication of the executive monkey experiment. But already it shows the sophistication of behavioral investigation in this area. Stress should not be a vague and general term. It can consist of operationally induced meanings for an animal, defined by the parameters of an experiment, and its interaction with genetic and epigenetic variation can be studied. Though the gap is still wide, both stress and strain, defined thus precisely, are highly suggestive of the factors we encounter in human disease.

(2) LEARNING, FEEDBACK AND VEGETATIVE-ENDOCRINE FUNCTION: ILLUSTRATIONS FROM THE RESPIRATORY SYSTEM.

A major tradition in the study of behavior, differing in concepts and methods from the clinical dynamic tradition, can be subsumed under the general term conditioning. Pavlov’s approach at first glance might seem closely related to somatic dysfunction: after all, his bell signalled salivation, an eminently visceral response. A deeper glance raises many questions. The bell had immediately

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to precede food for an animal concentrating on nothing else, harnessed and isolated as far as possible from any other input; stimuli and response had to be regularly associated or else the response extinguished rapidly. These are hardly the circumstances with which a freely moving animal might be expected to acquire a symptomatic visceral disturbance tenacious to the point of virtual inextinguishability. True, a number of workers reported promising leads, particularly Russian investigators advancing the concept of interoceptive conditioning, whereby one internal response served as trigger for another. Yet more than half a century after Pavlov’s original experiments, convincing and replicable evidence linking classical conditioning to psychosomatic dysfunction remained scant.

Operant conditioning refers to another type of learning in which the organism comes actively to emit responses to obtain some sort of reinforcement. Such conditioning seemed initially less related to visceral function. After all, the easiest way to get reinforced is to operate on the environment with one’s voluntary motor-effector system: the rat presses a bar to get food. Common sense does not readily suggest that the involuntary system could be used or directed by an organism to achieve ends in any such purposeful way. Curiously, the logic of clinical symptom theory hinted the reverse. The child might wheeze not simply because of inevitable accumulated environmental pressures but in order to manipulate his parents and stay home from school.

REINFORCEMENT IN INVOLUNTARY SYSTEMS

Neal Miller, a pioneer learning theorist, and his colleagues at Rockefeller University, chiefly DiCara, devised an imaginative, carefully controlled series of experiments to study what sort of purposive change in response to reinforcement could be induced in involuntary autonomic and endocrine systems. Their approach was radical: first, they wanted to eliminate the possibility that they might be dealing with voluntary responses which only in a secondary fashion would bring about some involuntary change—for instance, voluntary muscular tension secondarily influencing heart rate. Consequently, they paralyzed their experimental animals with curare. Secondly, to provide the most powerful possible reinforcement they delivered electric current directly to the centers of the brain subserving the core responses of pleasure and pain.

Using these two potent methods, they reported striking results. Suitably reinforced, animals could learn to influence heart rate, blood pressure, gastric motility, selective circulatory responses (such as altered blood flow in one ear but not the other) and even glandular responses such as the level of antidiuretic hormone.

These experiments involve capitalization upon random fluctuations in magnitude of visceral functions, reinforcing those that go in the correct or prechosen direction. Thus the animal is not only rewarded but informed; it is fed back explicit information about its visceral state, which presumably is not usually available to it. A closely related notion is that feedback alone of information about involuntary functions (in a human subject motivated to master them, thus most particularly a subject in whom that function is disordered) might facilitate the learning. Control itself would be its own reinforcement. Biofeedback in this context becomes a form of operant conditioning.

Human applications of the biofeedback approach have proved a growing
source of interest. The technique of most workers has been the same. A subject is connected to apparatus which will monitor a given function electrically; as it changes in a given direction a signal is emitted, often a light in front of him. His instructions are simply to be guided by the signal, for instance to keep the light on. A number of investigators have encountered limited success in gaining control over a wide variety of functions: Hnatia and Lang31, and Engel and his co-workers19 working with heart rate; Shapiro63 working with blood pressure; Basmajian7 and Cleeland12 working with neuromuscular control and neurologic disorders; Mulholland53 working with alpha rhythm in the human electroencephalogram.

VACHON AND BRONCHIAL ASTHMA

Let me illustrate by still another area. Vachon67 in our laboratory at Boston University has developed a biofeedback system, using the Respiratory Resistance Unit (RRU) developed in Mead's laboratory. The instrument permits second-by-second analysis of the resistance to airflow through the lungs, largely caused by the shifting caliber of the bronchioles. This is the crucial pathophysiological defect in bronchial asthma. Minor variations in resistance occur quite out of conscious awareness. By means of an on-line computer, resistance is calculated during each breath and the results fed back to a subject breathing continuously into a tube and watching a panel of lights in front of him. Two groups of asthmatics (15 in one and 13 in another) were individually given a single session of training trials in which they were rewarded by information and by a small amount of cash each time their resistance fell beyond a pre-set criterion. As predicted, they had a drop in airway resistance, averaging about 15 per cent. In contrast a smaller group of comparable asthmatic subjects used as controls received reinforcement only randomly and showed no change in resistance. The problems confronting this research are common to all efforts in this area. The effect is statistically significant but one cannot yet be sure how clinically significant. It is definite, but how lasting is not known. Finally the mechanism is not clear, whether it is due to some neuromuscular trick or some more direct and potentially more stable learned control over autonomic nervous system function. Until questions like these are answered, it is necessary to be cautious about what we can expect from this promising line of studies.

Asthma and related respiratory disorders illustrate some further important considerations. Thirty years ago the clinical hypothesis was offered by French and Alexander24 that bronchial asthma represented a "suppressed cry for the mother," a special emotional conflict acting in concert with allergic factors.

Today we can specify much more about each set of factors although much about each and their interaction remains still to be understood. The exact sequence of naturally occurring mediators is still unclear. We know that the bronchial apparatus is not only in constant adaptive interplay with the extrinsic physical environment but is under the influence of balanced internal forces. Parasympathetic stimulation can lead to transient bronchospastic effects. Presumably these are behind the action of suggestion on airway resistance, demonstrated by Luparello and his colleagues in about 50 per cent of a series of asthmatics42. It is of interest that attempts at classical conditioning by Stein and his group48 have succeeded in producing asthma-like effects in a susceptible animal, the guinea pig, though these appear to be unstable and somewhat

Lung resistance to airflow crucial in bronchial asthma

Vachon's promising studies must be viewed with caution

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equivocal. Stein's animal work showed also that central changes at the level of the hypothalamus, as had been suggested by some earlier workers, may be capable of modifying immune reactions. This finding raises the possibility that the brain may initiate not only transient but more prolonged pulmonary effects.

Moreover, it now appears that the sympathetic nervous system may play a larger role than previously thought. Beta adrenergic receptors are responsible for bronchodilation; they are able to overcome parasympathetic effects and thus oppose chronic, potent immunologic-inflammatory responses. Szentivanyi has advanced the hypothesis that in asthma long-standing impairment of the beta adrenergic receptor mechanism is a crucial defect.

Work from our own laboratory under the direction of Mathe suggests an alternative view, having shown differentially reduced excretion of epinephrine in asthmatics under experimental stress compared with normal subjects. The finding again suggests a possible link to the central nervous system.

Most other indicators of sympathetic arousal in asthmatics under stress increase as they do with other individuals. Studies with Anthracite and Vachon have actually provided evidence that alpha adrenergic agents provoke a bronchoconstrictive response. These indications of possible differentially impaired sympathetic nervous function may throw light on a long-standing mystery, namely why it is that asthmatics, who show every sign of generalized arousal and anxiety at the onset of attacks, seem in so doing to intensify rather than to relieve their pathophysiologic process.

We have obtained some further evidence that there may be a parallel defect in the psychologic sphere, a selective impairment of the expression of primitive hostile impulses, particularly when directed at important persons. There may be curbing of destructive impulses in order to preserve interpersonal security.

**JACOBS AND HEREDITARY PREDISPOSITION**

At still a different level, hereditary predisposition may be involved in the deranged response. Learning, however, may be required to perpetuate the response and to link it behaviorally with relationships to other persons. Jacobs in our group has done a study similar to Weiner's with army recruits, selecting subjects with indices of biologic vulnerability (skin sensitivity and histamine-activated eosinophile response) and with evidences of psychological vulnerability (fantasies and feelings by projective testing about parent-child interaction). His evidence suggested that the two factors in interaction best predicted those subjects who would actually develop clinical allergic disease.

Clearly, in asthma, we are dealing with a multifactorial disorder. The different factors operate across different time spans. Fluctuations are not immediate and long-term. They involve acute and chronic emotions and attitudes, in turn tied to lasting interpersonal relationships.

From a broader perspective, the same applies to most psychosomatic responses. Evidence is accumulating from a variety of studies that infants of all species have an attachment with many built-in biological components to the nurturing member of their immediate environment and disruption of this bond has profound physiologic consequences. Yet this is only the most obvious evidence of the role of attachment. Constant interaction with parents and later with peers facilitates or retards development and modulates it in innumerable

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ways. Learning, in a passive and active sense, influences every facet of human development, and we do not know the full extent of its influence on physiologic function. We do know that for the human patient unlearning and relearning must be comprehensive and slow tasks.

**3 CLINICAL CONSIDERATIONS.**

**A. Diagnosis:** In the science of man, diagnosis is never simple. It certainly cannot be based on a simplistic searching for "real" disease and when not finding it making the diagnosis of "functional" disorder by exclusion; nor can it be made simply by assigning a patient to one of a group of disorders labelled psychosomatic. A true psychosomatic point of view asks that we look for the presence or absence of emotional disturbance independently of bodily dysfunction, and try to assess interactions between the two.

We have no simple formula for such assessment. Psychological tests may be of some value, but must be used with care and tend to be more valuable for selecting populations at risk than in providing answers for a specific individual. Our best instrument is still a careful history obtained by a maximally free, warm, but searching interview. It is necessary to get a detailed account of events in the patient's life, to see beneath the facade that he may present, to weigh his personality liabilities and assets and the amount of stress under which he labors. It is particularly important to explore with an open mind possible connections between social and behavioral factors and the onset or the course of symptoms. One must observe reactions of the patient in the interview and to beginning treatment. Almost invariably these include both specific and nonspecific therapeutic effects. Inferences must go beyond conscious report and be guided by the fact that physiologic dysfunction may serve as a remarkable barrier, concealing emotional dysfunction from both patient and those around him.

The interviewer interested in psychosomatic processes may get some help from the technique which Deutsch called "associative anamnesis." This open-ended approach pays particular attention to the patient's mode of communication, the symbolic overtones accompanying description of symptoms, the emerging connections in his flow of narrative, the way in which past memories enter and especially the clues about relationships to key persons. Deutsch used to advise that one pay particular attention to the first individual mentioned in an initial interview. More generally, one should note evidence of losses or other changes in important relationships and similarities in the patient's symptoms to those of other persons close to him.

Such diagnosis should be part of the armamentarium of all well-trained physicians. Referral to a psychosomatic specialist or center may still be desirable for assessing intricate questions of judgment such as the depth of personality disturbance or plans for the most appropriate treatment.

**B. Treatment:** As we have seen, we do not have to date specific behavioral therapies that can claim to cure even part of the panorama of psychosomatic disorders. Nor do we have specific drugs that can regularly relieve even their symptoms. (We must be open to the possibility that drugs with powerful central effects in the autonomic nervous system, like many antihypertensive agents, also inevitably exert an influence on the basic mechanisms of emotions.) Insofar as psychological complaints include depression or anxiety, the antidepressants or
minor tranquilizers may be helpful although particular attention should be paid to untoward side effects such as skin reactions or blood pressure changes to which as a group these patients may have enhanced susceptibility.

Otherwise the individual with psychosomatic illness faces conflicts, problems, tension and distress like any other human. We struggle to help him with these as we do any fellow sufferer. Our efforts are modified by the unique features of his type of disorder just as they are in other special groups such as delinquents or psychotics. Bodily symptoms have individual significance and common cultural meanings. They cause concern; they can be a plea, even a demand. They must be managed in a nonjudgmental, genuinely open-minded fashion. When severe, responsibility should usually be shared with a qualified medical or surgical expert even though inevitably this increases the opportunity for misunderstanding and conflicting therapeutic emphases.

**SUPPORTIVE THERAPY**

In the psychological sphere the familiar continuum can be seen from therapy that is primarily supportive—maximizing warmth and mobilization of healthy factors within the patient—to therapy that aims at bringing hitherto unrecognized elements into awareness. The former approach attempts to reassure and damp down anxieties; the latter provokes distress, temporarily at least, in the hope of gaining a more lasting resolution. In patients with severe psychosomatic symptoms, even temporary exacerbations can be dangerous. Their somatic process may be destructive just as the depressed patient’s suicidal impulses may be. One undertakes uncovering approaches only when sure that the patient’s personality and the total therapeutic situation are stable enough to permit them. Early experiences with a number of psychosomatic syndromes, such as ulcerative colitis, led to occasional serious exacerbations when this principle was not fully understood.

Obviously, the more severe the somatic reaction, the more must adverse reactions be feared. A number of studies have suggested that severity of somatic disorder often parallels severity of psychologic disturbance in various groups of psychosomatic patients. One should attempt to assess both factors critically and keep them separate in one’s mind while planning therapy; but the approach should be cautious if hints of severe disturbance are seen in either sphere.

Many patients with psychosomatic disorders seem to express through their illness needs for help, care and support from the environment. Though neither unique nor specific to them, this trend puts them among the more dependent members of the general population. Often they are intensely threatened by frustration, and especially by loss of a key person. A sympathetic and understanding therapist, tuned to such needs, may, whatever his special training, have great success in dealing with these patients. A general physician or internist may often give this kind of supportive therapy and succeed fully as well as a psychiatrist. And he need not fear a perpetual dependence. Psychosomatic patients, no less than others, strive also for independence; given a reasonable measure of support through a crisis, their urges for maturity and growth will be discernible.

That is not to say that there may not be complicated demands and recurrent crises. These one encounters in any patient with longstanding emotional distur-

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Supportive therapy tries to reassure, damp down anxieties

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bance. When they become a problem in management or when the internist wishes help in disentangling psychic from somatic threads, psychiatric referral is advisable. It can be done tactfully. If the physician genuinely recognizes the importance of both psychic and somatic factors in these disorders and is honest in his avowal of ignorance as to the exact role played by each, he can share this attitude with the patient, indicating that neither has anything to lose by exploring the psychic aspect of the disorder as thoroughly as possible. One often hears of the patient who regards the psychiatric referral as a stigma or who is completely resistant to the idea that emotions may play a part in his disturbance. At times, the concern and even the resistance may be as much in the referring physician as in the patient.

A last indication for referral for psychotherapy is the relatively young person with evidence of psychological health suffering from a clearcut and classical somatization disorder, such as ulcer, asthma, benign hypertension or early rheumatoid arthritis. These are cases who may do reasonably well with medical management yet they may also have a substantial amount of masked conflict and personality disturbance, which only emerge clearly as attempts to dislodge symptoms are undertaken or, in fact, are beginning to succeed.

**TRAPS IN THERAPY**

The psychotherapist must avoid two traps. One is to make the symptom a battleground. His best tack is openly to focus on psychological issues, inviting the patient to share the gamble that if difficulties in that sphere can be helped the physiologic process may also change. By and large only when there is overwhelming evidence, usually after a therapeutic relationship is strongly established, can one directly point out the role of psychological factors as immediate antecedents of exacerbations.

A second trap is that of too-ready acceptance of irreversible somatic disorder and the need for continued somatic therapy. Psychosomatic patients have as much, perhaps more, quasi-addictive potential than other patients and frequently can settle into a medical regimen, such as steroids for allergic manifestations, from which they are weaned with great difficulty. It may be difficult, even dangerous, to withdraw such medication abruptly, but it may be equally dangerous to surrender completely to it as a permanent fait accompli. Again, a skeptical and inquiring attitude and genuine open-mindedness, plus the focus on actual life functioning, constitute the soundest approach.

The results of therapy for psychosomatic conditions are difficult to assess. Probably we are dealing again with a continuum from individuals with many normal elements to those with serious and chronic psychologic and somatic disorders. One must assess what kind of patient one is dealing with, both from the somatic and psychologic point of view, and one has to observe results over a long period. Studies of the Columbia group\(^{54}\) reviewing their 20 years of experience with ulcerative colitis, illustrate the difficulties and potential advantages of this kind of approach. A team of psychiatrists and internists made a detailed follow-up study and were able to show that psychotherapy in 57 patients with ulcerative colitis, though not spectacularly or totally curative, was of definite advantage when combined with medical and surgical treatment. By objective criteria their patients did better than 57 control patients, managed only medically or surgically, matched with respect to age, severity of disease and use of

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steroids. Such a careful study underlines the general impression prevalent clinically that the ideal treatment for the vast majority of psychosomatic patients comes from informed interdisciplinary management, whether this be in the hands of one person familiar with both medical and psychologic disciplines or from a therapeutic team in genuine collaboration with one another.

C. Psychosomatic Medicine, Medical Care and Medical Education Medical care can no longer be considered adequate unless it pays systematic attention to behavior and disturbances of behavior. By and large hospitals have discovered this. Liaison psychiatry has tended to flourish in many of the better teaching hospitals, guided largely by emerging needs. For example, intensive care units have come to realize that anxiety creates danger for them, interacting with the precarious balance of forces in their severely ill patients. Studies involving cardiac surgery have suggested that the will to live, and its converse, a state of depression, may be statistically significant contributors to survival rates in their equally precarious patient population; for a number of units psychiatric consultation is routine before major operative intervention. The host of problems surrounding the chronic renal patient, kidney transplantation and dialysis, also involve the psychiatrist in attitudes which are frequently close to suicidal as individuals struggle with their pain and distress, and also as issues arise involving who shall be allowed to live. Problems in this area represent only a sample of the growing body of difficulties posed by the increasing technological power of medicine to deal with seriously ill patients. There has been a growing interest in psychiatric aspects of the terminal patient and in the whole problem of the psychology of dying as it affects both the individual and his family. These issues continue to place the psychiatrist in the center of medicine as a skilled, though by no means omniscient, adviser.

Nor is his role confined to the hospital. Systems of collective health maintenance and health care delivery badly need psychiatric participation. Virtually every large scheme of collective health care has rapidly discovered, sometimes with surprise and even indignation, that psychosocial needs and preferences and emotional conflicts play a greater role in the total medical process than was anticipated by neat actuarial planning. The Kaiser-Permanente Plan, for example, is based on separating the sick from the well. Along with the well, however, is a group of the "worried well." Who are they? Are they mild hypochondriacs or mild schizophrenics? If our responsibility is really total health care, how do we manage them? It is not enough simply to detect them and turn them over to mental health professionals, assuming there are enough of these. The task is exquisitely psychosomatic. It requires the type of professional collaboration some of us found during World War II. There collective responsibility for incapacitated populations challenged all health professionals, facing them with common public responsibility without, it might be added, private remuneration.

Opportunities for new approaches offer themselves here, not only to provide paramedical personnel with medical-technician training but also to teach interviewing skills and to enhance psychological sensitivity. There is the chance, too, to introduce into medical care a genuine family approach, having as part of its core psychosomatic principles. Elsewhere I have quoted some remarks of Peter Regan, speaking of the movement towards unification and interdependence of medical care.

In this movement the knowledge and expertise of psychosomatic medicine should provide an ideal vehicle for communication among
medical specialties, a good teaching model for collaboration and a source of clinical study with ramifications to all aspects of health care. In the past psychosomatic medicine has been a small and relatively undernourished field, striving to serve as a link pin between the giant separatist enclaves of medicine. In the future the link pin is likely to become the focus, helping to move all of medicine to that comprehensiveness which has always been the ideal of great physicians and researchers.59

The trend in medicine at this moment is to reunite service and research components, to break down the walls of the ivory tower, in which so much brilliant research has been conducted but which has tended to isolate medicine from awareness of pressing social needs. As medical education is changing, it is becoming explicitly more aware of psychological and social dimensions. The recent insistence by the National Board of Medical Examiners on basic as well as clinical knowledge of the behavioral sciences is a harbinger of this rediscovered awareness.

Psychiatrists are now able to move more rapidly into their chosen field. Steps of the long medical apprenticeship have been shortened, or done away with, specifically the requirement of an internship prior to certification in psychiatry. At the same time many other workers are entering the mental health field. If the psychiatrist is to have an identity among them, if he is to make his specific contribution, he must have some of this identity anchored in medicine. In our own program we are moving toward the inclusion of a largely psychosomatic experience as a first year of psychiatric internship. It may well be that one of the most important contributions of the psychiatrist of the future will stem from his psychosomatic grounding, which will allow him to look in both directions, into the field of medicine and into the field of mental health. He may thus in a genuine sense become an interpreter, a translator between the two and a scholar, continuing to explore and explain obscurities.

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**BIBLIOGRAPHY**


